

REMARKS

Applicant thanks the Examiner for total consideration given the present application. Claims 1, 10, 11 and 20 are pending in the above application. Claims 1 and 11 are independent. Claims 2-9, 12-19 and 21 had been previously cancelled in the application. Applicants respectfully request reconsideration of the rejected claims in light of the amendment and remarks presented herein, and earnestly seek timely allowance of all pending claims.

Examiner Interview

Applicant thanks the Examiner for the courtesies extended during the interview of July 9, 2008. During the interview the Examiner suggested removing functional language “for” in order to recite the vehicle speed sensor that detects vehicle running speed more clearly. Furthermore, the differences between motor speed and vehicle running speed were explained to and appreciated by the Examiner.

Rejection under 35 U.S.C. § 103(a)

Claims 1, 10, 11 and 20 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Discenzo (“Discenzo”, U.S. 6,097,286) in view of Kurishige et. al. (“Kurishige”, U.S. 6,161,068). This rejection is respectfully traversed.

Amended independent claims 1 and 11 recite, *inter alia*, **“extracting a component within a predetermined frequency range out of the detected motor current, said predetermined frequency range increasing and decreasing based on the detected vehicle running speed and having a lower limit of 3 Hz and an upper limit of 9 Hz at high vehicle speed and an upper limit of 15 Hz at low vehicle speed”**. The Office Action refers to Kurishige to teach the above-mentioned claim feature. However, Kurishige simply discusses “rotation speed HPF 11 which is a high-pass filter having a folding point frequency set to a range of 0.2 to 30 Hz” (*See Column 5, Lines 44-48*). The range of 0.2 to 30 Hz set for the rotation speed HPF 11 of Kurishige is set as a max frequency of steering operable by a general driver, but not *set based on car speed detected by detection means* as claimed in independent

claims 1 and 11. In fact, Kurishige explicitly discusses that the frequency component is determined is based on “the rotation speed of the motor” (*See Column 5, Line 25*). Therefore, Kurishige does not mention “extracting a component within a predetermined frequency range out of the detected motor current, said predetermined frequency range increasing and decreasing based on the detected vehicle running speed and having a lower limit of 3 Hz and an upper limit of 9 Hz at high vehicle speed and an upper limit of 15 Hz at low vehicle speed”. To further distinguish the above-mentioned claim feature from the invention disclosed in Kurishige, there is clearly no mention of the specific frequency range being delineated based on detected vehicle running speed as claimed in the above-mentioned claim feature in Kurishige.

Amended independent claims 1 and 11 recite, *inter alia*, “**amplifying the extracted component with an amplification factor which increases as detected vehicle running speed decreases and decreases as detected vehicle running speed increases**”. The Office Action refers to Figure 9(a) of Kurishige to teach this feature. However, Figure 9(a) simply shows having such frequency characteristics that reverse characteristics of actual coil impedance agrees with the gain by reverse characteristics computing means for computing a coil voltage drop equivalent value at a frequency at which steering oscillation occurs at time of steering (*See Column 12, Line 65-Column 13, Line 2*). There is not even a mere mention of “amplifying the extracted component with an amplification factor which increases as detected vehicle running speed decreases and decreases as detected vehicle running speed increases” as recited by independent claims 1 and 11.

Amended independent claim 1 recites, *inter alia*, “**calculating said steering reaction force by setting a target value of a steering reaction force which corresponds to the steering amount; and adding to said target value the extracted and amplified component**”. Amended independent claim 11 recites, *inter alia*, “**calculating steering reaction force by means setting a target value of a steering reaction force which corresponds to the steering amount; and adding means adding to said target value the component extracted and amplified by the extracting means**”. The Office Action refers to Kurishige to teach the above-mentioned claim feature. However, S105-107 of Kurishige discusses an adder adding the assist torque current and

damping current to obtain a target current (*See Column 6, Lines 16-18*). Therefore, even though Kurishige discusses adding two components and Kurishige discusses computing to obtain a target current, Kurishige does not discuss adding the previously extracted and amplified component to a target value of a steering reaction force as recited by independent claims 1 and 11.

For at least the reasons stated above, independent claims 1 and 11 are patentably distinct from Discenzo and Kurishige. Claims 10 and 20 are at least allowable by virtue of their dependency on corresponding allowable independent claim.

Accordingly, it is respectfully requested to withdraw this anticipation rejection of claims 1, 10, 11 and 20 based on Discenzo and Kurishige.

CONCLUSION


In view of the above amendments and remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael K. Mutter Reg. No. 29,680 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: July 25, 2008

Respectfully submitted,

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